# COUNTERFEIT BANK NOTES 2000 S SYSTEM



# HOW TO DETECT COUNTERFEIT BANK NOTES;

OR,

#### AN ILLUSTRATED TREATISE

ON THE

DETECTION OF COUNTERFEIT, ALTERED, AND SPURIOUS

# BANK NOTES,

WITH ORIGINAL BANK NOTE PLATES, ENGRAVED EXPRESSLY FOR THIS WORK

BY

RAWDON, WRIGHT, HATCH & EDSON,
BANK NOTE ENGRAVERS, OF NEW YORK.

BY GEORGE PEYTON, EXCHANGE BROKER.

SIXTH THOUSAND.

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### PREFACE.

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In a work of this description, whose title is "How to detect Counterfeit Bank Notes," a preface is hardly necessary, because, if the book possesses any merit it will immediately commend itself to the business public. I would state, however, that this work is written with a view of not only enabling all who take an interest in the subject to become experts in the science of detecting fraudulent bank notes, but also to make them conscious of the method by which they become so. I have condensed the letter-press, and avoided technicalities, as much as possible; though, from the nature of the work, I have been forced into repetitions, which, however essential, rather mar, in a literary point of view, the symmetry of the treatise; and, in conclusion, if the reader will display as much assiduity in studying it, as I have in my endeavors to make it clear and comprehensive for his benefit, I shall be amply compensated for any labor that may have been expended in its production.



# PEYTON'S SYSTEM

OF

# DETECTING COUNTERFEIT BANK NOTES.

In presenting the third edition of this small volume to the public, I have found no occasion to modify or expunge any of the principles laid down in the earlier editions; on the contrary, I have received gratifying evidence, not only of their practicability, but also of the facility with which pupils, through their instrumentality, became, in a short time, accurate judges of bank notes.

Since the first edition was issued, various efforts have been made by bank-note engravers to prevent, if possible, the counterfeiting and altering of bank notes; and with, I regret to say, very indifferent success. The truth is, that bank-note engraving has been carried to such a degree of perfection in this country, that it may well be questioned whether it is susceptible of much further improvement. As I stated, however, in the earlier editions of this treatise, and wish to state again,

in the most earnest manner, "that all the advantages which the present system of bank-note engraving presents, and all the safeguards against fraud which it furnishes, are beneficial to those, and those only, who are critically familiar with it as a work of art." In other words, those who are ignorant of the nature and construction of the designs found on all modern bank notes, known as lathe-work, bas-relief, parallel ruling; and who look upon the exquisitely engraved vignettes as merely pictorial embellishments, can never become capable of determining, with any degree of accuracy, the genuineness of bank notes.

It certainly requires no argument to prove that the most perfect bank-note design, both as to construction and execution, can be of little service, so far as protection against fraud is concerned, to one who has lost his eyesight; and I cannot see the impropriety of considering all who have not availed themselves of the decided advantages which a knowledge of modern bank-note engraving confers, in the detecting of counterfeit bank notes, as but little better off than their blind neighbor. It is remarkable, in a business community like ours, in which everything relating to profit is so perseveringly kept in view, that so important a feature as that of being able to distinguish a good bank note from a bad one, should have received so little attention.

"The enormous quantities of fraudulent bank notes,

of every possible character," says an influential Bank-Note Detector, in a late issue, "put in circulation daily, is incredible." It is evident, notwithstanding the large number of publications devoted to the description and detection of fraudulent issues, that the number of forgeries is increasing every day. It is also certain that those who consult the pages of these "detectors," obtain nothing but vague and contradictory ideas, of no permanent value whatever; and who, after years of perplexing study, find themselves as ignorant of the subject of detecting counterfeit notes, as when they first began their inquiries.

Hence it is that so many persons have abandoned the idea of ever becoming competent judges.

Now, the true method of detecting counterfeit bank notes will be found, on a careful examination, to be quite simple.

If the reader had never seen a diamond, for instance, and it became necessary for him to acquire a sufficient knowledge of its character to enable him to distinguish it readily from an imitation, what course would he pursue? He would, I think, obtain from a reliable source a diamond of whose genuineness there could be no doubt. He would then, by frequent and careful examination of this specimen, gradually familiarize his eye with those characteristics by which, independently of its physical properties, the true gem can alone be recog-

nized. If he is now informed that all genuine diamonds are precisely of the character of the one under consideration, and that the only shade of difference, if difference it may be called, is that produced by the lapidary, in his method of cutting the rough stone, his knowledge of the subject will have been much increased. He will now be shown the few styles in which diamonds are cut, and these, with a little examination of the gems so shaped, he readily comprehends; and so obtains a practical knowledge of a subject of which he was, a few days before, entirely ignorant. If an imitation diamond, made of glass, be now shown to him, he will immediately detect its character; and why? because he would perceive that it possessed none of those essential qualities which he knows, by experience, are to be found in the true stone.

Now the character of every commodity—bank notes included—of which the eye is the determining agent, has to be decided on precisely similar grounds; and it is only asserting a truism, in saying that it is impossible to detect a counterfeit article without an intimate knowledge of the genuine one; and that the ability to detect the one is in direct ratio to the knowledge possessed of the other.

The method of instruction adopted in this treatise is analogous, in many respects, to the above illustration.

The accompanying bank-note Designs, or illustrations, were engraved, as the reader will perceive, by the eminent house of Rawdon, Wright, Hatch & Edson,\* and are of so general a character as to embody all the particulars that go to make up the genuine bank note; and while the pupil is familiarizing himself with these, he is in reality becoming familiar with the entire bank-note issue of the country. All genuine bank-note engraving is essentially the same, and a critical knowledge of one bank note is—as in the case of the diamond—a critical knowledge of all bank notes.

In concluding these introductory remarks, I may add that I shall endeavor to make this subject clear to the pupil in the following pages, and to place him in a position by which he may be enabled, with a little perseverance on his part, to claim for himself the unquestionable advantages which a correct knowledge of bank notes confers.

<sup>\*</sup> This house is now a component part of the American Bank Note Company, incorporated in 1858, and comprises among its members all the former Bank Note Houses (as enumerated below), having thus at its command all their talent, skill, and experience, both artistic and mechanical.

The following firms were united in the formation of this Company: Rawdon, Wright, Hatch & Edson; Toppan, Carpenter & Co.; Danforth, Perkins & Co.; Bald, Cousland & Co.; Jocelyn, Draper, Welsh & Co.; Wellstood, Hay & Whiting; New England Bank Note Co.; John E. Gavit; Edmonds, Jones & Smillie.

Many years' active experience in the exchange business has convinced me, conclusively, that the multiplicity of counterfeit, altered, and spurious bank notes, which have, from time to time, been forced into our circulating currency, has been owing more to the very imperfect knowledge we possess of what constitutes good banknote engraving, than to any ability, in point of workmanship, displayed by the counterfeiter in producing those fraudulent issues.

So diffused, indeed, is this ignorance, that not one per cent. of the community knows the object or character of those beautiful devices which are to be found on every genuine bank note, and which constitute the only safeguard against fraud it can furnish. With the remaining ninety-nine per cent., paper money is strictly enigmatical. Some judge from the first impression their minds receive on glancing at a note; others place great faith in pin

<sup>\*</sup> Counterfeit notes are those which are fac-similes of the genuine.

Spurious notes are those which differ entirely from the genuine.

Altered notes are those whose title, locality, or denomination, has been extracted and some other one pasted or printed in its place.

holes; others, again, consider certain conditions of the ends, whether they be thumbed or not, infallible. Numerous other methods might be mentioned, if it were at all necessary, which would show the apparently hopeless condition we are in respecting a correct knowledge of paper currency. The cause of this confusion unquestionably arises from the multitude of banks issuing notes, together with the universal idea, that to be a good judge of paper money, it is essential to be acquainted with each individual issue in the country. I shall endeavor to prove that this idea is as erroneous as it is impracticable, and that a correct and certainly rational method may be determined by investigating and reducing the science of bank-note engraving to a few fundamental principles, which must, from the peculiarity of the present style, enter into and form an integral part of each genuine bank note issued.

Every science originates in fixed and definite principles; and in the most abstruse, these are few and simple.

Botany was so admirably systematized by the celebrated Linnæus, that a few hours' attentive study affords the student as much knowledge of the science as so many years' labor under the old method.

And that profound naturalist, Cuvier, informs us "that if you have but the extremity of a bone well preserved, you may, by attentive consideration, and the aid of the resources which anatomy furnishes to skill, determine all

the rest quite as well as if you had the entire skeleton submitted to you." And I would add that a bank note can be as accurately determined, in the majority of cases, from an inch of the engraving, as if the entire note were present.

The remarkable facility with which a broker will detect a bad note, whether he has ever before seen it, or not, would prove that the difference between the genuine and the counterfeit is of an exceedingly intelligible nature.

It is a truth, beyond dispute, that the counterfeit note has never yet been made, which on close examination did not disclose its base origin. And as this is universally admitted by every person who has had experience in bank notes, I think no better evidence can be required to prove that the present system of bank-note engraving, if it were generally understood, is essentially perfect in every respect. Indeed it would be a very difficult matter to invent a method or system of engraving bank notes, that would be superior to the one used at the present time, in consequence, among other reasons, of its admirable divisions of labor, by which the various parts of the note are engraved by different artists, each one making a specialty of his part, and consequently not only excelling in execution, but naturally checking each other, if any is disposed to be a rogue. Few persons would credit the fact, that to prepare a bank note for circulation, the united efforts of a dozen artists are required,

each of whom is perfect in his department. Such, however, is the case: hence it is that our bank-note currency, in an artistic point of view, is superior to any in the world.

But however perfect the system of bank-note engraving may be, there will always be more or less attempts at counterfeiting; and until the community are instructed as to what constitutes good engraving, and become familiar with the characteristics of genuine bank notes, they cannot be capable of protecting themselves from counterfeits.

Impressed with this view of the matter, and which every hour's experience confirms, I have in the following pages endeavored to familiarize the reader with the basis upon which all genuine notes are constructed, confident that with a little attention to the points laid down, he will rapidly master a science that has hitherto been considered by the mass of the population incomprehensible.

It may be proper here to inform the reader that, about the year 1820, the basis of the present system of bank-note engraving was initiated by Jacob Perkins, of Boston, who invented and introduced the transfer-press, by whose agency engraved designs may be reproduced any number of times from the original. The perfection to which bank-note engraving has been brought is, in a great measure, owing to this admirable invention. A

few years later, Charles Spencer, of Philadelphia, succeeded, through the instrumentality of the geometrical lathe, in producing a superior description of mechanical engraving, which became immediately deservedly popu-This kind of engraving has been much elaborated since it was first introduced, and now presents endless varieties of those exquisite lace-like figures of every possible combination, and which all attempts to produce by hand have been unsuccessful. It is the ground-work upon which the denominations 1, 2, 3, 5, etc., denoting the value of the note, appear; it is also used for "borders," "backs," and "tail-pieces;" the net-work of fine lines, which tints the faces of some notes, printed in green or red, is geometrical lathe-work, in its simplest form. In connection with the transfer-press and geometrical lathe may be mentioned the parallel ruling machine, for drawing fine parallel lines, invented by Wilson Lowry, of London: these three constitute the principal mechanical appliances used in the manufacture of our bank-note currency, and to which I shall devote a few pages, to convince the reader that a correct knowledge of this important subject may be obtained by a little careful attention, on his part, to the points laid down.

As I have already stated, one of the most prominent obstacles in the way of acquiring an accurate knowledge of bank notes is the erroneous idea that an intimate

acquaintance with each individual issue in the country is indispensable. If we consider that there are 1,500 Banks, issuing, on an average, seven denominations of notes each, making, in the aggregate, more than 10,000 distinct issues, the magnitude of the task becomes at once apparent; and its practicability would be best illustrated by citing the case of an individual who should endeavor to learn a language by merely committing to memory all the words found in it, without knowing anything of its alphabet, or of the relation those words bear to each other. In the study of bank notes, notwithstanding there are 10,000 distinct issues, the student will, in a little while, discover that there are a few distinguishing features which are common to the entire bank-note currency; and these, which, if you please, you may call the alphabet of bank-note engraving, when once acquired, render the whole subject plain and intelligible, in every respect.

If the reader will now turn to plate No. 4, specimen D, he will perceive, on examination, that it is a strip of engraving composed of beautiful lines, fine, clear, and mathematically parallel. This is the product of the parallel ruling machine, and is to be found upon every modern\* bank note in existence. It is used by bank-

<sup>\*</sup> The bank notes which are not modern are those struck from what is known as the "Patent Stereotype Steel Plate," issued in the Eastern States; they are few in number, and are going out of circulation rapidly. There are a few other old plates whose engraving does not come up to the modern standard.

note engravers for shading letters, particularly those composing the titles or names of banks (see "Bank of Ohio" on the plate); also for "backs" on which denominations appear in the centre of the note (see "five dollars" on the same plate); also for ground-work of "clear skies," "still water," architecture, etc. were now possible for the reader to have before him the entire bank-note currency of the country, and to examine minutely all the parallel engraving thereon, and to compare the same with the specimen strip here given, he would find that they are IDENTICAL in every respect. In a word, the specimen given in the plate is a type of all this kind of engraving; and it must be evident that when the pupil's eye becomes thoroughly familiar with it, he will have obtained the mastery over a portion, at least, of every bank note engraved after the modern process.

Counterfeiters have always been severely exercised in their attempts to produce parallel ruling. The impossibility of doing it effectually by hand, the skill and experience necessary, even with the aid of machinery, to make the most ordinary quality, render it no trifling obstacle to overcome. Hence, the *experienced* eye has no difficulty in detecting the counterfeit work—its lines being coarse, clouded, and otherwise imperfect; or, to avoid coarseness, they are engraved so indistinctly as to suggest the idea of having been put on with a brush.

the genuine, on the contrary, always presenting the lines clear, uniform, and perfect in every respect.

The specimen given in the plate has been prepared for the purpose of affording the student an opportunity of familiarizing his eye with standard work; his progress will, in a measure, depend upon his intelligence and perseverance. It is, perhaps, unnecessary to inform him that the strips are *larger* than any he will find on notes, as there are no letters or figures cut upon them; the specimens given are about the extremes used.

In examining bank-note engraving, everything depends upon judicious analysis—the art of separating the engraving under examination into the smallest possible intelligible parts, each of which must be scrutinized as if its quality determined the whole. Hence, in studying the ruling given, the pupil should separate it into lines, as if he were counting it, holding it as near the eye as possible, without distressing the sight, and permitting the light to fall upon it over the left shoulder.

The next important feature in bank-note engraving is the geometrical lathe-work. By looking at the centre of fig. A, plate 3, the net-work, or simplest execution of the geometrical lathe, will be distinctly visible. As the figure increases in size, it becomes more complicated, until half-a-dozen figures are encircled one within the other, all showing different styles of work. It will be perceived that the lines are fine and perfect, like the

parallel ruling, but are woven into a pattern, which is the peculiarity of this work. If the pupil will examine carefully all the Counters given in this plate, except those marked B, he will find that they are composed of similar work, but of a more elaborate pattern.

The endless varieties of these Combinations, formed by the aid of the geometrical lathe, can only be equalled by the kaleidoscope.

In determining the genuineness of lathe-work, the pupil must bear distinctly in mind that the fineness of the line or thread, and the clearness and regularity of the pattern into which it is woven, are alone the evidences upon which his judgment must rest.

In all genuine work, no matter how intricate it may appear, the lines, and the manner in which they are woven, will be clearly and distinctly visible. Counterfeit lathe-work, on the contrary, is always imperfect. The boundary of the figure and its subdivisions are the same in appearance as the genuine; but the fine lacework which fills up these divisions is always wanting, while dots and scratches of a smoky and unsatisfactory appearance are substituted instead.

The Counters marked B are also composed of lines, which by the introduction of *light* and *shade*, appear raised—hence the name bas-relief. This style of work is, to a certain extent, abandoned at the present day. The genuine can be determined by observing the pattern

formed by the lines which stand out distinctly from the groundwork. In the counterfeit the lines are scratchy, and the pattern is coarse and clumsy.

In geometrical lathe-work, I would inform the reader, if he has not noticed the fact, that the color of the line is sometimes black and sometimes white: black on a white ground, and white on a black ground. The black line is the original production of the lathe; but, by an elaborate process, it is converted into a white line on a black ground. The white line is usually adopted in preference to the black one, though the quality is the same in each. The various parts of the note, whether the engraving be mechanical or artistical, are executed on thin squares of steel, after which they are TRANSFERRED on cylinders—thus becoming the "rolls," or dies of the bank-note engraver.

In using the term *transfer*, it may be necessary to state what is understood by the word.

If you take a coin and press it on the surface of a piece of wax, or any other equally soft substance, certain indentations corresponding to its letters and characters will be produced; if these indentations are filled with ink, and paper or cloth pressed over them, an exact printed copy of the original coin is the result. In banknote engraving, a piece of softened steel, about three inches square and one-eighth of an inch thick, is selected, and upon its surface is engraved, either by hand or

machinery, the design required. After it is finished in every respect, it undergoes the process of carbonization, or in other words, it is converted into the hardest steel; it is now ready to be transferred. This is performed by means of a powerful machine termed a transfer press, weighing about a ton, and capable of exerting an immense pressure; the design is brought under a small cylinder of softened steel, which is rolled over it with such force by the machine, as to take up in relief every line in the most perfect manner. The cylinder is hardened, and is then capable of transferring its design to a bank-note plate, by being rolled over it in the same manner.

We now come to Letters and Figures.

Genuine letters and figures are distinguished by their fine finished clear *outlines*, and by their neat and graceful proportions. The principal point which distinguishes counterfeit letters and figures is the *outline*, which bears evidence of the unsteadiness of the hand that engraved it. In notes whose titles have been *altered*, this defect is strikingly apparent.

The round hand or script, in the body of the note—
"Will pay to bearer on demand"—which is given in
Plate 4, is to be found on all bank notes, and must be
carefully studied in the following manner. Fix your eye
on the extreme point of the curve which forms the left
of the W, and trace it over with your eye slowly and
carefully; then down the heavy stroke, up again the

hair stroke, down again the heavy stroke, and up the graceful curve which completes the letter. In the same manner trace all the letters, always beginning at the hair stroke, as it is the only method by which counterfeit work of this kind can be detected with facility—the minute irregularities, particularly in the curves and hair strokes, becoming visible by such close scrutiny only. This should be practised frequently.

We have now arrived at the Pictorial Illustrations, or vignettes, which embellish bank notes, and which constitute by far the most important subject yet discussed in these pages. It cannot be expected that the ordinary reader shall fully realize the many beauties with which these illustrations abound, even after they have been pointed out to him, without constantly exercising his eye on the models given; nor is it reasonable to assume that he is at all familiar with the art by which the expert recognizes that certain laws are harmonized in the genuine vignette and transgressed in the counterfeit. The education of the eye, with reference to engraving, is a subject of vast importance, not only to those who wish to avail themselves of the knowledge of engraving for a specific purpose, but to the general student who wishes to study and contemplate the exhaustless beauties of nature and art, clearly and understandingly. We are taught by those who have made the subject a specialty, that the beauty of form and expression, arising from a

perception of utility, or of fitness of certain means to produce a certain end, may be observed both in animate and inanimate objects—in the works of nature and art. In animate beings we are gratified by recognizing that a certain form is suited to the wants of the animal, and that certain desired effects or motions, are produced with ease, or little effort. It is on this principle that we admire the beauty of the human form, every part of which is perfectly fitted for its intended purpose; and that we admire the motions of a horse, a stag, or a grey-hound, as being made without any apparent difficulty, and as the result of a power which accomplishes its end with the least possible exertion.

The same feeling which makes us take pleasure in movements and forms indicating ease, leads us likewise to dislike those which express constraint and toil: hence, both in nature and art, all forced and labored attitudes, all tension of muscle, all visible and over-strained efforts to produce a certain effect, or to express a certain feeling, are offensive to taste. And thus all angular or jerking action, and all heavy dragging of the limbs, are devoid of beauty, as being signs of violent and toilsome effort, and as being opposite to that equable, flowing and easy motion in which grace consists.

And this may be further exemplified by considering the beauty and unity of the features of the human countenance; and although we may labor under the

indifference which familiarity generally creates, and overlook their perfection, yet, if a deformity presents itself—say the absence of the nose—a feeling of intense commiseration is immediately excited, which the other features, no matter how beautiful they may be, cannot relieve. And thus it is with inanimate objects, whether in nature or art: in viewing a landscape, either natural or on canvas, the mere sensual gratification of the eye is comparatively so small as scarcely to be attended to; but yet, if there occur a single spot offensively harsh or glaring, all the magic instantly vanishes, and the imagination avenges the injury offered to the senses. glaring and inharmonious spot, being the most prominent and obtrusive, irresistibly attracts the attention, so as to interrupt the repose of the whole, and leave the mind no place to rest upon.

Acting upon these general principles, the vignette designer introduces into his picture certain combinations of figures, which, from their local character, are familiar to every eye; and whose beauty and expression require the utmost skill and ability of the engravers to develop their characteristics naturally and gracefully. Hence human figures are the most prominent, and upon which the most reliance is placed. Next come domestic animals, with whose outlines and beautiful proportions everybody is supposed to be acquainted; a landscape will now be necessary to show the figures to advantage; and

this in turn must have the usual quantity of water, sky, and perspective.

It will be seen, then, that the genuine vignette is not merely a fancy sketch suggested by the whim of the artist, but a scientifically arranged picture, drawn to the life, complete in all its parts, and presenting to the counterfeiter the most serious obstacles to imitation; who, in order to be a successful imitator, must be a master of at least half a dozen different branches of engraving; as this is impossible, even with a professional artist, it must be considered beyond dispute, that the counterfeit vignette will exhibit the imperfections which usually characterize base imitations.

The following vignettes, introduced to illustrate the pictorial or artistical portion of the bank note, were drawn and engraved in strict conformity with the preceding remarks. From the very general nature of vignette engraving, it cannot be reduced to any positive unit; yet sufficient data may be obtained from a few of its leading characteristics, when well understood by the pupil, to determine its genuineness with certainty. If the reader has been at all observant, he has noticed, long before this, that upon every bank note one vignette at least is composed of human figures: in the majority of notes in circulation all the vignettes are so composed—the female figure, from its absolute perfection in an anatomical point of view, combined with the grace and

harmony with which association clothes it, invariably predominating. Now, as all human figures are drawn in accordance with a certain ideal standard of perfection, it must be evident that it is only necessary to be thoroughly familiar with the peculiar characteristics of any one, to be really acquainted with the characteristics which determine ALL. I shall endeavor to make this clear as we proceed.

No. 1 is Cupid rolling a dollar; a village, and rail-road cars in the distance. The principal object of this vignette is to show the admirable manner in which what is technically called *flesh-work* is executed, and as this is an important branch of vignette engraving, it may be proper to state that it is seldom, if ever, successfully counterfeited.

No. 2 is a group of females, emblematic of Commerce, Agriculture, and Manufactures, whose chaste outline, beauty of expression, and artistic execution, cannot be excelled.

Their arms, necks, and feet are *bare*, in consequence of the insurmountable difficulty experienced by counterfeiters in their attempts to execute these parts.

It will be perceived that the texture of the skin is represented by *fine dots* and *lines*—an admixture to be found in every human figure, and with which the pupil must at once familiarize his eye; this, together with the expression or naturalness of the eyes, nose, mouth, neck,

fingers, and toes, always determine genuine work. I cannot too forcibly impress on the pupil's mind the absolute necessity of studying carefully and efficiently (until he can retain their peculiar naturalness with facility in his memory) the points just named. This accomplished, he will find that in the counterfeit the skin is coarse—that is to say, the lines and dots which represent it—and the other features equally defective.

It will be perceived that in the present group, our beautiful goddesses represent Commerce, Agriculture, and Manufactures; and that the distinguishing features before referred to, viz., the skin, eyes, nose, mouth, neck, fingers, and toes are identical in each. Now if the background of this picture were converted into a landscape, a basket of flowers placed in the hand of one of the females, a sword in that of the second, and a wreath of laurel in that of the third, the local character of the picture would be changed, without interfering in the least with those artistic peculiarities before mentioned, and by which its genuineness is to be determined.

Therefore, the pupil must never permit himself to be embarrassed by the display of paraphernalia, but must determine the genuineness of the figure by scrutinizing the parts mentioned, whether the goddess be floating in the clouds, reposing in a bower of roses, or condescends to adopt the more substantial occupation of milking cows or feeding chickens.

No. 3 represents the United States Mail Steamship Baltic in a gale of wind; the action of the wind and water is delineated in a masterly manner.

No. 4—"The Mechanic." The expression of the countenance is admirable; he is evidently constructing in his mind's eye some new labor-saving machine. The directions given as to the proper manner of examining the female figure, are strictly applicable to this also; the dots and lines representing the texture of the skin are heavier and more shaded to produce the masculine appearance, and should be carefully studied, as also the eyes, nose, mouth, chin, arms, and fingers. The figures in the background present a natural and expressive outline.

No. 5—An agricultural scene: the farmer ploughing; the horses are drawn to the life; the one in the background is well executed. It will be seen that in the human figure, the eye, mouth, hands and attitude are perfectly natural.

No. 6 is a very pretty sketch, showing sky, still water, and shrubbery.

No. 7—A marine view: the ships under canvas, and the action of the water, are very spirited.

No. 8—A locomotive and a train of cars. This vignette is very popular at the present day, owing, no doubt, to the spirited appearance which it presents, together with the intricate nature of the machinery and

the architecture of the cars, which require no ordinary ability to execute.

No. 9—A distant view of a house, such as is usually given in vignettes, showing the proportion and architecture, in a very neat manner.

No. 10 is a portrait of a beautiful female, exquisitely finished; the *texture* of the skin can be seen here in perfection; the hair, showing the strands and the reflection of light, is admirably given.

No. 11 is a medallion portrait of Washington, whose countenance will be immediately recognized; this is a specimen of bas-relief; the lines are waved, and by the aid of light and shade, appear raised from the surface. This is a mechanical production.

No. 12 is an Indian viewing the evidences of civilization. The dots and lines which denote the texture of the skin are placed close to each other, thereby giving it a darker and coarser appearance. With this figure end the artistic specimens, all of which I shall frequently refer to in the sequel.

Before closing the subject of vignettes, it may not be out of place to say a few words regarding the style and manner of executing them. The style of engraving universally adopted for vignettes is known to artists as the *line engraving*, and is composed of *etching*, "stippling," and lines cut with the graver. The etching is a chemical process: the plate prepared to receive the en-

graving is first coated with a composition like varnish; the artist then, with an etching needle, engraves his design on the coated surface, cutting at each stroke through the varnish only, and thereby exposing a portion of the plate, corresponding of course to the mark of the needle. A preparation of nitric acid is now poured over the engraved part, which corrodes the lines or characters made by the needle (the varnish protecting all the other parts of the plate). This is termed "biting in," and the length of time the acid is allowed to remain on the plate determines the depth of the part so corroded. The principal advantage of this process is the saving of labor—the acid corroding or eating the lines into the plate, which otherwise would have to be cut by the artist.

The etching finished and the plate cleaned, the artist with his graver—a tool not unlike an awl, the blade of which, however, terminates in an angular point, of which there are many varieties—retouches the corroded parts—sharpening, shading, and finishing—adding new lines or crossing those already formed—working, at each step in the process, with the utmost care, caution, and delicacy, often spending weeks on a bit no bigger than the head of a pin, until the picture is finally completed in all its parts.

Stippling is the term applied to that portion of the engraving composed of dots, and which is introduced in human figures, to convey the idea of softness and plump-

ness. It is executed with the point of the graver, or sometimes with a finely pointed punch.

Assuming that the pupil has now made himself acquainted with the various points which have been discussed, I shall devote the remaining pages to a series of rules arranged for his guidance: those relating to the genuine note will be, to a certain extent, a recapitulation of what has already been stated; those relating to the counterfeit note will point out all the imperfections which experience has proved to be inseparably connected with it—these should be carefully studied, and, if possible, committed to memory.

#### THE PRINCIPAL POINTS

#### WHICH CONSTITUTE

# A GENUINE BANK NOTE.

#### 1.—NAME OF THE BANK.

THE letters which compose the name of the Bank are cut with unerring accuracy, presenting a sharp and finished outline, and are invariably neat and uniform. see lettering on the Plate.

#### 2.—LOCATION.

The name of the State, and the locality in which the Bank is situated, are composed of smaller letters than those in the title, but equally perfect, and should always be examined.

#### 3.—DENOMINATION.

The figures expressing the denomination of the note are beautifully engraved; their outline, proportions, and general execution can be seen to advantage in the specimens given in Plate 3.

The denomination in the centre of the note, composed of letters, should be scrutinized attentively. See Plate 4.

#### 4.—LETTERS AND FIGURES.

All other letters and figures of the note will be found perfect in every respect; the curves, angles, and hair-lines are without breaks or flaws, and have a finished and graceful appearance. The writing or script, "will pay on demand to the bearer," should be carefully studied, letter by letter, and the hair-lines and curves, with a little attention, will become impressed on the mind.

#### 5.—ENGRAVERS' IMPRINT.

The engravers' signature or imprint, near the margin of the note, is clearly and beautifully engraved, the letters, particularly the capitals, are perfectly executed, without the slightest flaw or imperfect turn in the entire name. See illustration.

#### 6.—TINTS.

The green and red tints which are to be found on most bank notes, are composed of a net-work of fine but plain lines, executed with the lathe; the letters and figures printed in those colors, denoting the value of the note, are also lathe-work. A very pretty specimen of the plain style is given in Plate 4, border C, in which the line, and the manner in which it is woven can be distinctly traced.

#### 7.—PARALLEL RULING.

Parallel ruling, as before described, is always clear and regular. Examine critically the shading of the letters which compose the title of the Bank; also the shading of those which compose the name of the State and the locality in which the Bank is situated. In every instance, the pupil will find, on the genuine note, the parts referred to executed in the most perfect manner.

See Plate 4.

#### 8.—BAS-RELIEF.

Bas-relief is composed of lines which, by the judicious introduction of light and shade, appear raised. See Plate 8, Fig. B.

#### 9.—GEOMETRICAL LATHE-WORK.

Geometrical lathe-work has been discussed at length in another page; nothing can be added here but a reiteration of the same remarks: study carefully and diligently the genuine work.

#### 10.—VIGNETTE.

The vignettes described on bank notes, from their exquisite beauty and finish, present to the counterfeiter the most serious obstacles. The engravings given in the plates are conclusive evidence of the advanced state of the art, in this country, at the present day.

#### 11.—PRINCIPAL FIGURE.

The principal figure in the vignettes of the various

engravers, is, with few exceptions, a female: this, from its expressive anatomy and graceful proportions, requires the most skillful efforts of the artist.

#### 12.—HAIR.

The hair is neatly and naturally arranged; and on closely examining it, the strands, and the reflection of the light on it, are discernible. See Fig. 2 and Fig. 10.

#### 13.—FLESH.

The texture of the skin is represented, as before stated, by fine dots and lines, intermixed: the dots usually denoting the parts upon which the light falls—as may be seen by examining the forehead of the female, Fig. 10—and the lines denote the parts that are slightly shaded, as may be seen on the neck of the same figure. The shaded part is made by the lines crossing each other at acute angles, forming a beautiful lozenge work; though sometimes but one course of lines is given, especially when the shading is intended to be heavy.

Examine Fig. 2, particularly the shaded sides of the arms and neck.

#### 14.—EYES.

The eyes are an important point in the note; their principal characteristic being that the *pupil is distinctly* visible, showing the white clearly.

In examining them, it is well to look at both at the same time, and the naturalness of their expression will then be manifest.

See Fig. 2.

## 15.—NOSE, MOUTH, AND CHIN.

The nose, mouth, and chin are well-formed, natural, and expressive; the lips are slightly pouting, and the chin is well thrown out. see Fig. 2.

#### 16.—NECK.

The natural contour of the neck is displayed by the delicate shading, and its proportions perfectly harmonize with the rest of the figure. See Figs. 2 and 10.

#### 17.—ARMS.

The arms have their graceful curve; the flesh, as before mentioned, is represented by delicate dots and fine lines, so intermixed as to convey an idea of plumpness. See Fig. 2.

## 18.—HANDS.

To delineate the hands properly, requires all the ability of the artist.

Observe carefully the fingers, and the natural manner in which they are displayed: the life-like sense of touch they exhibit is masterly. See Fig. 2.

## 19.— FEET.

The feet require a like degree of skill; the toes are clearly and accurately defined. See Fig. 2.

### 20.—DRAPERY.

The drapery is neatly and elegantly arranged; the heavy lines denoting the coarse texture, and the fine ones

the ethereal gossamer, which is evidently a fashionable fabric in the regions of fancy. See Fig. 2.

#### 21.—MALE FIGURE.

The male figure in no respect differs from the female, except, of course, that it is more masculine, and the dots and the lines representing the flesh are closer to each other and appear coarser; but the eyes, mouth, hands, feet, and general expression, are determined in precisely the same manner.

Indians have their peculiar dark complexion and muscular appearance; the white of the eye is clearly seen, and the fingers and toes are properly developed.

See Figs. 4 and 12.

### 22.—PORTRAITS.

The portraits, whether representing males or females, are executed in the most elaborate manner; all the features of the countenance before mentioned, are admirably given. See Fig. 10.

## 23.—LANDSCAPES.

The landscapes to be found on bank notes, are well finished in every respect—trees, water, sky, etc.

Trees and shrubs are neatly drawn, the limbs are well proportioned, and the foliage has a luxuriant appearance.

The "still" water is represented by parallel lines, with streaks of white to show the reflection of light, and to produce a limpid effect. Clear skies are formed of fine parallel lines, and when clouds or heavy skies are required, they cross each other.

For trees, shrubs, still water, and clear skies, see Fig. 6. For heavy skies, see Figs. 3 and 7.

#### 24.—DOMESTIC ANIMALS.

Domestic animals of every description—horses, oxen, sheep, etc., etc., are drawn to the life; their eyes, limbs, and proportions are perfectly accurate, and cannot fail to impress the reader favorably with the accuracy of bank-note engraving. See Fig. 5.

#### 25.—PERSPECTIVE.

The perspective, showing a distant view of the surrounding country, is always clear and distinct—the sky fades away into distance until it mingles imperceptibly with the horizon. The small figures in the background are always exceedingly well engraved. It must be borne in mind, that they are placed there for the purpose of being seen, consequently their outline and general character can always be recognized. See Fig. 1.

## 26.—ARCHITECTURE, SHIPS, AND RAILROAD CARS.

The lines denoting the surface of the materials in buildings are arranged in accordance with the law of light and shade: hence very fine lines, gradually becoming indistinct, leaving the surface white, denote the part upon which the light falls, and on the opposite or dark side, these are parallel and quite distinct. See Fig. 9.

Ships are well defined, and the canvas has a clear texture. See Figs. 7 and 2.

Railroad cars are very accurately delineated; in examining a train, observe carefully the car most distant from the eye. See Fig. 8.

I shall now describe these twenty-six divisions of a bank note, *counterfeited*.

The many species of counterfeit engraving used in making fraudulent bank notes—Photographic, Anastatic, Lithographic, and impressions from wood, copper, steel, and pewter, all differing from each other, though equally bad, when compared with the genuine—preclude the possibility of giving counterfeit illustrations with any degree of advantage.

When the reader becomes familiar with genuine work, he will then detect every kind of counterfeit work without any difficulty—because what is not genuine must be counterfeit.

#### PRINCIPAL POINTS

WHICH DETERMINE

# A COUNTERFEIT BANK NOTE.

#### 1.—NAME OF THE BANK.

The letters which compose the name of the Bank are principally defective in their outlines, which lack the sharpness and finish of the genuine. This is particularly so in titles which have been altered. Many counterfeit titles are, however, so well executed that no written rules can possibly point out the slight shade of difference existing between them and the genuine. Constant practice on genuine letters is the only remedy.

## 2.—LOCATION.

The small letters which compose the name of the State and the locality of the Bank are poorly executed; examine each letter separately and the defects will be apparent.

#### 3.—DENOMINATION.

The *large* figures expressing the denomination of the note are generally well engraved; the *small ones*, on the contrary, are always the reverse.

The vulnerable point of the counterfeiter lies in the small engraving. Run your eye over the outlines of the small figures, and their imperfections cannot escape you.

### 4.—LETTERS AND FIGURES.

All other letters and figures to which the pupil's attention has not been called, must be determined by the general principles laid down in this work.

## 5.—THE ENGRAVERS' IMPRINT.

The engravers' imprint near the margin of the note is never correctly engraved; the letters, when examined *separately*, will be found imperfect, some of them being quite crooked.

## 6.—TINTS.

It must be borne strictly in mind by the pupil, that the color of the ink in which engraving may be printed has nothing whatever to do with its merits in an artistic point of view; the quality of the engraving, not the color, is the point to be determined. There are many persons who labor under the impression that because the surface of a bank note is decorated with prismatic

colors, it must, necessarily, be a genuine one. Nothing can be more fallacious.

It is certainly unnecessary to say that bad engraving, print it in whatsoever color you please, is bad engraving still—hence the rules which apply to counterfeit engraving make no distinction as to color, quality being the sole point at issue. It may be well to say, however, that the red color has a tendency to spread, thereby giving the engraving a coarser appearance than it really possesses. Counterfeit work printed in colors can be readily detected—its defects being more glaring than when printed with the ordinary ink.

### 7.—PARALLEL RULING.

The parallel ruling used for shading the letters, backs, etc., is generally imperfect: the lines are coarse and seldom strictly parallel: to avoid coarseness, the counterfeiter goes to the opposite extreme, and makes these lines appear as if they had been put on with a brush. By endeavoring to count them, the minute breaks, irregular thicknesses, and want of uniformity will be discovered.

## 8.—BAS-RELIEF, OR MEDALLION ENGRAVING.

The medallion-work presents a *scratchy* appearance; in portraits, the eyes and mouth are imperfect, and the expression is vague.

## 9.—GEOMETRICAL LATHE-WORK.

Counterfeit lathe-work can be detected by the blurred and dotted appearance of the lines where they intersect each other.

In examining curvilinear figures, begin in the centre, and then by gradually following around the circles, one within the other, you will discover many defects which would otherwise be overlooked.

I would mention to the reader, that on many counterfeit, or rather spurious bank notes, the actual work of the lathe is to be found, and though a practised eye would instantly detect it, he cannot expect, without some experience, to be so fortunate; the figures I speak of are generally made up of small circles, like the centre of Figure  $\Lambda$ .

## 10.—VIGNETTES.

The vignette, when closely examined, will be found coarse and imperfect.

## 11.—PRINCIPAL FIGURE.

The principal figure in the vignette is always the best finished one, the counterfeiter knowing that if this is passable, the surrounding imperfections will not be observed; when, however, this is a human figure, particularly a female, his skill fails, and the following defects will be noticed.

#### 12.—THE HAIR.

The hair is coarse and clumsy, and has an untidy and smoky appearance.

#### 13.—skin.

The skin is invariably defective, and the most effectual method of discovering the same will be as follows: Centre your attention on the forehead of the figure, gradually extending your observation down the face; centre your attention now on the neck, and examine minutely the lines which cross each other and act as a shade to throw out the chin; extend your observations now to the shoulders and down the arms to the hands; now take the feet, ankles, and any other exposed portion of the body showing flesh-work. At each step in your progress concentrate your whole attention upon but a small portion of the engraving at a time—say a few dots; this, though irksome at first, is infallible, and the counterfeit-work will immediately display its true character, the dots and lines being rough and unfinished, and the texture of the skin hard and artificial.

## 14.—EYES.

The eyes are always poorly engraved. In the majority, there is nothing discernible but a black speck; those which are considered well executed have a little of the white, though the pupil appears to mix even with this. The distant one is the most imperfect; look directly at

both pupils, and if either is crooked, which is often the case, it will be noticed.

## 15.—nose, mouth and chin.

The nose, mouth and chin are poorly formed and lack expression; examine each separately, and then dwell for a moment on the combined expression of the eyes, nose and mouth.

#### 16.—NECK.

The neck is formed by coarse lines, which are intended to throw out the chin; but this, like all shading in counterfeit figures, will be detected from its smoky appearance.

### 17.—ARMS.

The arms have a disjointed appearance—as if they were attached to the body by some new method; the elbow is rather sharper than is natural; the wrist is dark and not well formed; the dots and lines which denote the flesh are darker and coarser than the genuine; the shaded side of the arm is very dark.

## 18.—HANDS.

The hands are invariably poorly drawn, particularly in developing the fingers, which are coarse and clumsy, without any apparent animation. Occasionally the fingers are drawn to a point, and in many cases the little one is not formed.

#### 19.—FEET.

The feet are as imperfect as the hands. The toes are seldom all developed, and the dots and lines are coarse.

#### 20.—DRAPERY.

The drapery is untidy, and arranged in a slovenly manner; the dark material is of a murky cast, and the delicate gossamer which enrobes the body shows many very coarse threads.

#### 21.—MALE FIGURE.

The male figure has the same imperfections as the female; and the flesh, eyes, features, arms, and toes, are determined in the same manner.

#### 22.—PORTRAITS.

The portraits, whether representing males or females, from the fact that the proportions are large, a superficial observer would likely overlook their imperfections.

The eyes appear foggy, and the shading around them is dark and gloomy; the mouth lacks its characteristic expression; the flesh partakes of the defects already referred to, and the entire countenance is stiff and artificial.

## 23.—LANDSCAPE.

The landscape is usually poorly executed, particularly the trees, which look dark and blasted. The lines repre-

senting "still" water are scratchy rather than parallel, producing a muddy appearance.

The sky is of the same consistency as the still water—scratchy and imperfect.

#### 24.—DOMESTIC ANIMALS.

Domestic animals are miserably executed; to see this, examine their eyes and limbs.

#### 25.—PERSPECTIVE.

The perspective is always imperfect; the figures in the background can seldom be recognized, and the sky appears to surround every object in the vignette.

## 26.—ARCHITECTURE, SHIPS, AND RAILROAD CARS.

The architecture has a black appearance, and when it is represented in the distance, the lines, which ought to be quite fine, are coarse and heavy. Ships are poorly drawn, the texture of the canvas is very coarse, and the general appearance is bad.

Railroad cars are also poorly executed, the lines which denote the surface of the wood-work of which they are made, are heavy and indistinct—the car farthest from the eye is usually the most imperfect.

## ALTERED BANK NOTES.

THERE are two kinds of altered bank notes: those that are altered from a smaller to a higher denomination, and those whose title or locality has been extracted and some other stamped on.

#### WHERE THE DENOMINATION IS ALTERED.

Bank notes altered from a smaller to a higher denomination can be instantly detected by those who know anything of genuine engraving, in consequence of the striking contrast between the part which has been altered and the rest of the note, which, like a patch of coarse cloth on a fine garment, cannot be overlooked. The counters are generally extracted and counterfeit ones printed in their places; on examination, the miserable execution will be at once perceived; the letters or figures, denoting the denomination, are poorly engraved, and their outline and shading are coarse and imperfect. In many instances, however, counters which have been torn off genuine notes are substituted for those extracted, by what is termed the "pasting process." These alterations can be detected by holding the note to the

light, when the parts pasted on will be discovered. The denomination in the centre of the note, when examined, letter by letter, will also disclose the fraud—the letters being poorly formed and blurred, and the parallel lines upon which they are engraved, or by which they are shaded, being irregular and imperfect.

Frequently the figure of the denomination is scraped out of the counter, and one denoting a larger denomination printed in; examine its outline, and this will be discovered.

## WHEN THE TITLE, OR LOCALITY IS ALTERED.

The note can be detected, by carefully examining the letters and the parallel ruling which shades them. As before stated, all counterfeit letters, particularly those in altered notes, are poorly formed, blurred, and in every instance without the sharp finished outline of the genuine.

The parallel ruling, out of which many letters are composed, and of which all shading is formed, may always be detected by the coarse and irregular thicknesses, and otherwise scratchy appearance which it presents. In altering anything in a note, the surface of the paper is very often destroyed: by comparing the texture of the paper between the letters, with that which is immediately above and below them, this defect will be discovered.

## PHOTOGRAPHY

AS

#### A MEANS OF COUNTERFEITING.

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Notwithstanding the many statements put forth by scientific men, as to the dangerous character of Photography, when applied to the counterfeiting of bank notes, it has thus far (fortunately) proved a failure. And, although some bank notes counterfeited by this process have been palmed off on the unwary, I doubt very much if the photograph can be produced that will deceive a good judge of bank notes. In its manufacture there are physical difficulties to be encountered, at every step: the colors in which genuine bank notes are printed are, to a certain extent, anti-photographic; but by far the most effectual safeguard against this species of fraud is the superior quality of our bank-note engraving, the sharpness, clearness, and finish of which can never be imparted to the photography.

The pupil will have no difficulty in detecting these frauds: the parallel ruling, fine lathe-work, hair lines, etc., etc., will be found very defective; while the entire engraving presents a peculiar purplish, or rather a smoky appearance—frequently suggesting the idea that the note has been washed, and the ink partially extracted.

#### A FEW WORDS ABOUT

# "BANK-NOTE REPORTERS"

AND

## "DESCRIPTIVE LISTS."

A BANK-NOTE LIST, such as we find published in this and other principal cities, is an exceedingly valuable publication: giving as it does the names and rates of discount of all the banks in good standing; the names of those that are broken and worthless; the character and quality of the various frauds perpetrated in bank notes; together with a digest of general financial information. Certainly no one in business can well do without it. That its power, however, to prevent fraud is limited, admits of no question, since it can only give information that a counterfeit has appeared AFTER the public have been swindled by the same. Counterfeiters are by no means so communicative as to inform the publisher of a Bank-Note List that, on a certain day, and on a certain bank, they are going to circulate a certain counterfeit: on the contrary, they will take good care to flood the various cities simultaneously, so that even the telegraph has sharp work to give publicity to their actions. Yet there are persons to be found who suppose that the editors of these journals possess oracular power, by which frauds on the bank-note currency can be anticipated, and that it is only necessary to turn to the pages of their "Detector," to obtain the desired information. It is no easy matter to explain to them the true state of the case, as they persist in telling you that they received it (the note which you have just informed them is a counterfeit) "because there was nothing about it in the Reporter." After the counterfeit has made its appearance, a description of it is to be found in the Detector; but unfortunately, in the vast majority of cases, language alone is not sufficient to point out the defects, which only the practised eye can detect, and the poor resource left to those thus ignorant of what constitutes the genuine work is, in the expressive and highly suggestive words of the "Detector" aforesaid, "better refuse all bills of this plate."

The Descriptive List is intended to give a description of the leading features of genuine bank notes. To give an example: We have before us a ten-dollar bill, purporting to have been issued by the Broadway Bank, New York City, and we wish to ascertain if it is good. We turn to the Descriptive List and find the description of the ten-dollar notes of that Bank to be as follows:—

"10—10, female, cars, canal, ships and city." We now examine our note, and find that it corresponds in every respect with said description, and we of course pronounce it genuine. We receive the note, and in due time take it to the Bank for redemption; but, to our surprise, we are informed that it is not good, and although it answers to the description of the genuine, it is nothing but a counterfeit fac-simile of the same. On the other hand, it will be perceived that if the note in question had not answered to the description called for by the List, it would have been pronounced bad, and perhaps correctly so.

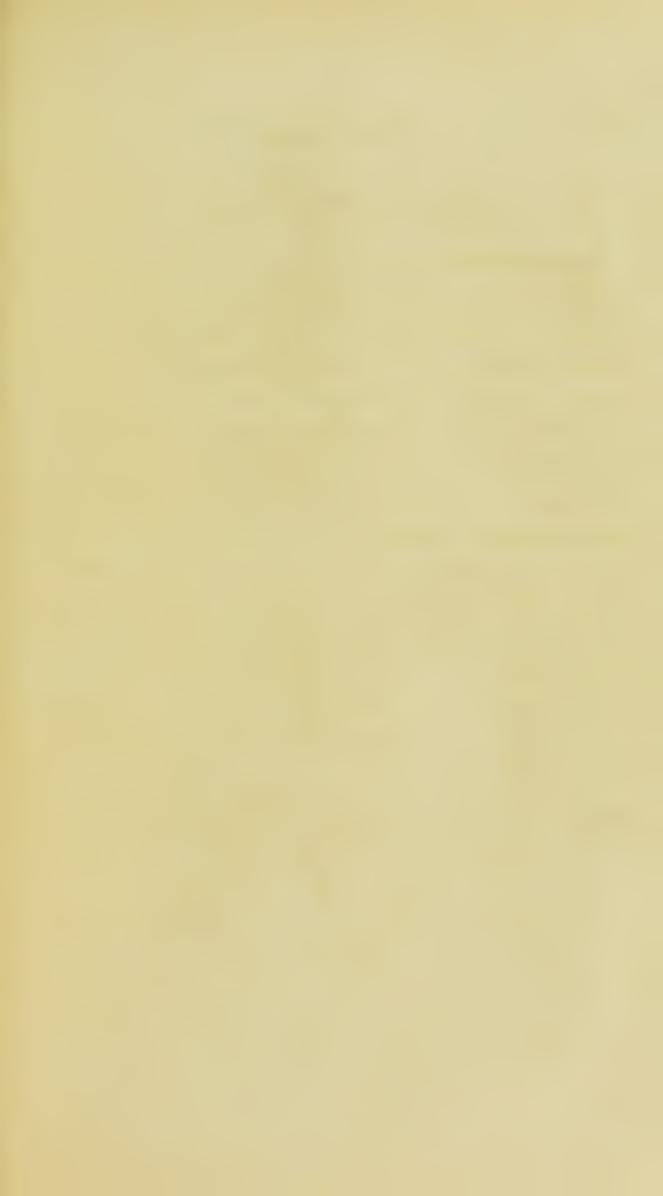
The Descriptive List, then, is useful in cases in which fraudulent issues bear no resemblance to the genuine; but it is worse than useless in those instances wherein similar notes are copied, in whole or in part, from the genuine.

In conclusion, I have to say that no work whose pages require to be constantly examined, in order to ascertain the character of every note presented, can ever be a serviceable one, since it would be utterly impossible for a person engaged in business to be every moment turning to those pages, and then, after a lapse of years, find that he knows as little about the quality of paper money as he did at first.

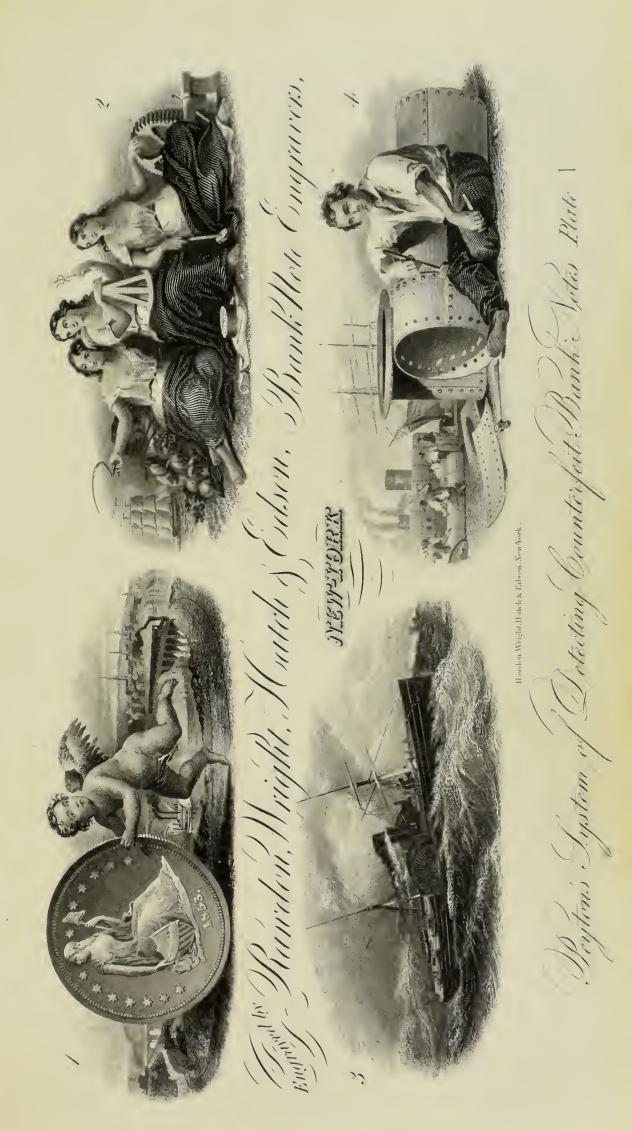
#### CONCLUDING REMARKS.

HAVING now brought this Treatise to a close, I may be permitted to offer a word of counsel to those who consider the subject discussed in the foregoing pages of sufficient importance to them to devote a little of their time to its acquisition. I shall be frank to assure such that without constant practice, and frequent application of the points and rules laid down, they need not hope Nothing requires more care and caution for success. than the study of bank 'notes: a "little learning" here will be found strictly in accordance with the Poet's definition and admonition. Those, however, who are determined to improve themselves, will find that every hour's study adds to their fund of knowledge, and that, step by step, they are acquiring an accomplishment, the value of which, in a business point of view, can hardly be over-estimated.

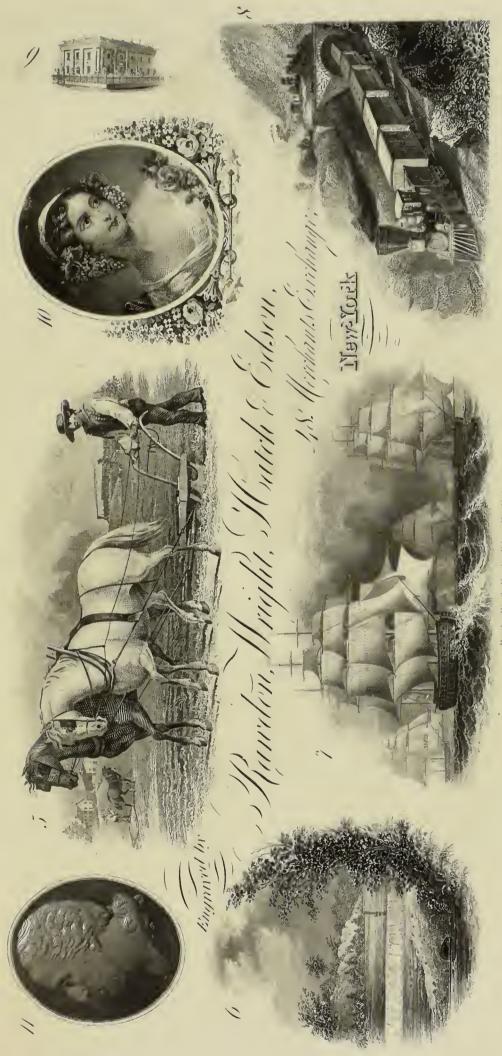
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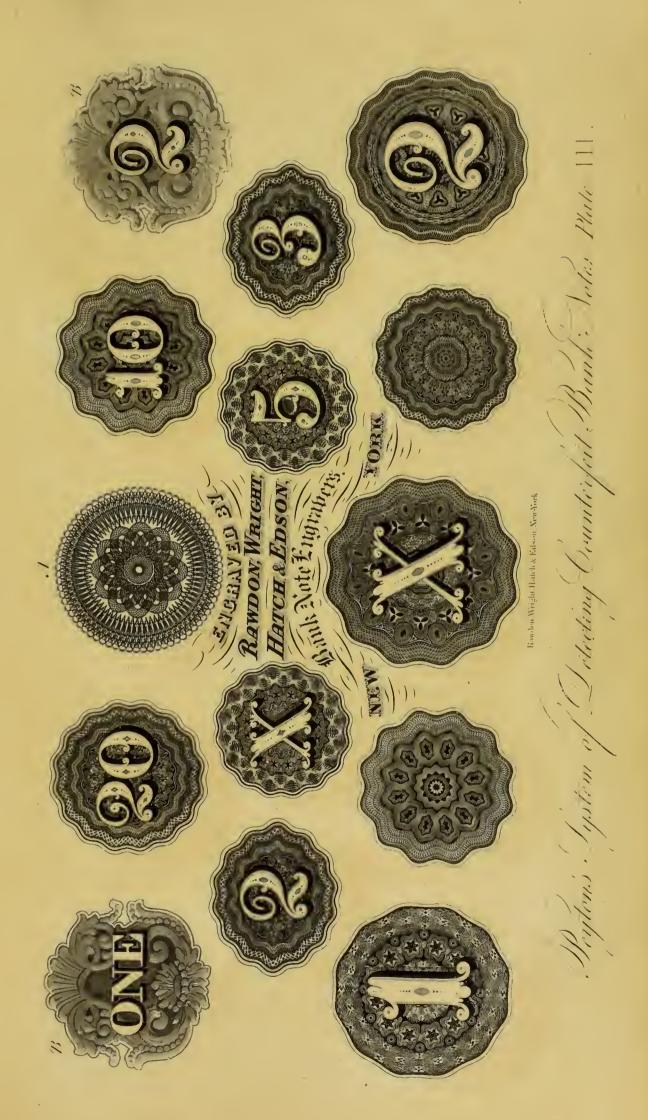






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